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PATENT APPLICATION

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IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Daryl E. Anderson et al.

Confirmation No.: 6766

Application No.: 10/613,842

Examiner: M. Bogart

Filing Date: July 3, 2003

Group Art Unit: 3761

Title: OPTHALMIC APPARATUS AND METHOD FOR ADMINISTERING AGENTS TO THE EYE

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TRANSMITTAL OF APPEAL BRIEF

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on June 1, 2007.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d)) for the total number of months checked below:

☐

1st Month  
\$120

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2nd Month  
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☐ The extension fee has already been filed in this application.

☒ (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

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Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re Application of

Dated: August 1, 2007

DARYL E. ANDERSON  
and JOHN STEPHEN DUNFIELD

HP Docket No. 200208831-1

Serial No. : 10/613,842

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Alexandria, Virginia 22313-1450

Sir:

**BRIEF OF APPELLANTS**

This Brief is presented in opposition to the Examiner's rejection of claims 1-20 and 22-32 in the final Office action dated March 21, 2007.

**I. Real Party in Interest**

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 State Hwy 249, Houston, Texas 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

**II. Related Appeals and Interferences**

There are no known related appeals or interferences.

### **III. Status of Claims**

The present application was filed on July 3, 2003 with original claims 1-42. Claims 33-42 were withdrawn pursuant to a restriction requirement response dated June 5, 2006. Appellants cancelled claim 21 and amended claims 20, 22, 24 and 30 in a response dated December 15, 2006. Claims 1-20 and 22-32, as amended in the response dated December 15, 2006, are the claims at issue in this appeal. Claims 1-20 and 22-32 stand rejected.

### **IV. Status of Amendments**

No amendments have been made subsequent to the Office action dated December 15, 2006.

### **V. Summary of Claimed Subject Matter**

The summary is set forth in exemplary embodiments. Discussions of selected elements and recitations of claimed subject matter can be found at least at the cited locations in the specifications and drawings.

Independent claim 1 is directed to an ophthalmic apparatus 10 including an eye-positioning device 158 for assisting a subject 8 in positioning an eye E in a desired position for administering a fluid to the eye (Figures 1 and 4 ; pg. 15, ln. 28 – pg. 16, ln. 20 and pg. 21, ln. 27). The ophthalmic apparatus further includes an applicator 14 for dispensing fluid into the eye when the eye E is in the desired position (Figure 1; pg. 9, ln. 10 – pg. 11, ln. 1).

Independent claim 20 is directed to an ophthalmic apparatus 10 including a dispensing apparatus 14 for dispensing fluid into an eye E of a subject 8 (Figures 1 and

4; pg. 9, ln. 10 – pg. 11, ln. 1 and pg. 21, ln. 27). Apparatus 10 further including an eye-position detector 152 for detecting the current position of the eye E relative to the dispensing apparatus (Figure 4; pg. 15, ln. 27 – pg. 16, ln. 28). The ophthalmic apparatus also includes a feedback device 158 for providing feedback information that assists the subject in moving the eye from the current position to a predetermined position relative to the dispensing apparatus for administering the fluid to the eye (Figure 4; pg. 16, ln. 7 – pg. 17, ln. 14).

Independent claim 28 is directed to an ophthalmic apparatus 10 for administering a liquid to an eye E of a subject 8, the apparatus including detecting means 152 for detecting the position of the eye (Figure 4; pg. 15, ln. 27 – pg. 16, ln. 28). Apparatus 10 further includes dispensing means 14 for dispensing the liquid into the eye when the eye is in a predetermined position (Figure 1; pg. 9, ln. 10 – pg. 11, ln. 1).

#### **VI. Grounds of Rejection to be Reviewed on Appeal**

Appellants request review of the following grounds of rejection on appeal:

1. The rejection of claims 1-6, 8-10, 14-16, 18, 19 and 28-31 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,270,467 to Yee ("Yee").
2. The rejection of claims 11-13, 17 and 32 under 35 U.S.C. § 103(a) as being obvious over Yee in view of U.S. Patent No. 5,368,582 to Bertera ("Bertera").
3. The rejection of claim 7 under 35 U.S.C. § 103(a) as obvious over Yee in view of U.S. Patent No. 6,299,305 to Miwa ("Miwa").
4. The rejection of claims 20, 22, and 23 under 35 U.S.C. § 103(a) as being obvious over Yee in view of U.S. Patent No. 5,171,306 to Vo ("Vo").

5. The rejection of claims 24-27 under 35 U.S.C. § 103(a) as obvious over Yee and Vo in view of U.S. Patent No. 6,159,186 to Wickham et al. ("Wickham").

6. The provisional rejection of claims 1-4, 6, 17, 18, 28 and 30-32 over claims 2-50 of copending U.S. Patent Application Serial No. 10/412,057 to Anderson et al. ("the '057 application") under the nonstatutory, obviousness-type double patenting doctrine.

7. The provisional rejection of claims 9-16 over claims 2-50 of the '057 application in view of Bertera under the nonstatutory, obviousness-type double patenting doctrine.

8. The provisional rejection of claims 20 and 22 over claims 2-50 of the '057 application in view of Vo under the nonstatutory, obviousness-type double patenting doctrine.

## **VII. Argument**

Appellants respectfully disagree with the rejections made by the Examiner under 35 U.S.C. § 102(b), under 35 U.S.C. § 103(a), and under the nonstatutory double patenting doctrine. When the claims are considered under the proper standards in which to review them, their patentability becomes evident.

### **Anticipation**

Appellants submit that claims 1-6, 8-10, 14-16, 18, 19 and 28-31 are not anticipated by Yee under 35 U.S.C. § 102(b).

## **1. Standard of Review**

Under 35 U.S.C. § 102(b), an invention is anticipated, and thus unpatentable, when “the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States.” 35 U.S.C. § 102(b). “Rejection [of a claim] for anticipation or lack of novelty requires, as the first step in the inquiry, that all the elements of the claimed invention be described in a single reference. Further, the reference must describe the Appellants’ claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it.” *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655 (Fed. Cir. 1990) (citations omitted).

## **2. The Cited Reference Does Not Disclose Each Element Recited in the Claims**

Yee fails to disclose each feature recited in claims 1-6, 8-10, 14-16, 18, 19 and 28-31 as necessary to anticipate them under 35 U.S.C. § 102(b).

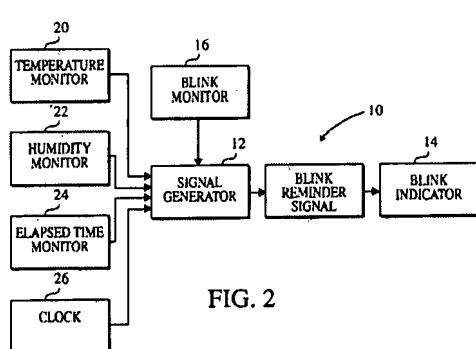
### **A. Claims 1-6, 8-10, 14-16, 18, and 19**

Yee does not anticipate claim 1 under 35 U.S.C. § 102(b) because it does not disclose each feature recited in claim 1. Claim 1 recites:

An ophthalmic apparatus comprising:  
an eye-positioning device for assisting a subject in positioning an eye in a desired position for administering a fluid to the eye; and  
an applicator for dispensing the fluid into the eye when the eye is in the desired position.

Yee does not disclose an eye-positioning device for assisting a subject in positioning an eye in a desired position. Appellants’ vigorously disagree with the

Examiner's position that device 10 of Yee discloses this feature. As shown in Fig. 2 of Yee (shown below), device 10 includes a blink monitor 16 and a blink indicator 14.



A blink is the rapid movement of the eyelids over an eye. Eye position is the orientation of an eye in an eye socket. For example, a forward eye position is when the eye is oriented in the socket such that the pupil is centrally located. The position of the eye is inconsequential to the mechanics of a blink because the eyelids can move over the eyes independent of the position of the eye. For example, one can blink while looking up or down, to one side or another, or straight ahead. Thus, a blink monitor pertains to the position of an eyelid as opposed to an eye-positioning device, which pertains to the position of an eye.

Blink monitor 16 is not an eye-positioning device as recited in claim 1 because monitoring blinks in no way "assist[s] a subject in positioning an eye in a desired position for administering a fluid to the eye." Blink monitor 16 "monitors the frequency of the computer user's blinks, the time between blinks, the time since last blink, and the like." (Col 7, ln 46-48). The eye can be in any position during such blinks.

Blink indicator 14 is also not an eye-positioning device. A device for encouraging a user to blink need not have any effect on positioning an eye. Blink indicator 14 of Yee

provides cues to prompt a user to blink. It does not direct the eye to any particular orientation in the eye socket. Blink indicator 14 thus is not an eye-positioning device.

One skilled in the art would understand that the Yee blink monitor and blink indicator are different than the Appellants' eye-positioning device. Furthermore, both the specification of the present application and Yee distinguish an eye from an eyelid. For example, Appellants' specification differentiates an eye from an eyelid by discussing an eyelid's role in wetting the eye (¶2) and activating specific dispensers to ensure droplets reach the eye instead of being sprayed onto the eyelid (¶47). Further it discusses the eye in ways inconsistent with eyelids, e.g. dispensing fluid onto an eye (¶21), moving the eye to the right and left (¶24). Similarly, Yee distinguishes eyes from eyelids, such as when it orients an enclosed area "proximal the eyes 2, eye lids, and eye sockets of the computer user 1..." (Col. 9, ln. 66 – Col. 10, ln. 1). Where an eye is distinguishable from an eyelid, it is submitted that an eye-positioning device must be distinguishable from a blink encouraging device.

Accordingly, Yee does not anticipate claim 1 (or claims 2-6, 8-10, 14-16, 18, and 19, depending from claim 1) under 35 U.S.C. § 102(b).

Claim 2 is not anticipated by Yee for reasons beyond those provided for claim 1. Yee does not disclose "an eye-position detector for detecting the position of the eye" as recited in claim 2. In fact, Yee does not even disclose detecting position of an eye. Detecting blinks or detecting whether one's eyelids are open or closed is independent of detecting the position of an eye. An eye can be in any position when the eyelids are



open, and in any position when the eyelids are closed. Thus, the blink detector disclosed in Yee does not anticipate an eye-position detector.

Yee also does not disclose “a display for displaying a real-time image of the eye and a target, such that when the eye is aligned with the target, the eye is in the desired position” as recited in claim 5. Yee describes how looking at a display monitor for extended periods can cause dry eyes. To alleviate dry eyes through increased blinking, Yee incorporates a visual indicator 34 to prompt blinking into a portion of a display monitor 6 as shown in Fig. 7. The disclosed visual indicators are a dot, a changing or moving character or icon, and subliminal messages. A real-time image of an eye is not disclosed in Yee. Further, a target on a display such that the eye is in the desired position when the eye is aligned with the target is not disclosed in Yee. Yee thus fails to disclose each feature recited in claim 5, as is necessary to anticipate it under 35 U.S.C. § 102(b).

With regard to claim 6, Yee does not disclose “an image pick-up device for capturing an image of the eye.” Yee discloses, in Fig. 4, a phototransistor 18 which “measures the intensity of the reflected light and, thereby, detects computer user blinks.” (Col. 8, ln. 14-15). Phototransistor 18 is not an image pick-up device because it measures the intensity of light reflected off of an eye or eyelid. It does not capture an image of an eye. Data representing the intensity of reflected light is not an image of an eye. Instead, light intensity is a measure of light's power per unit solid angle. In contrast, an image is a reproduction of the likeness of a subject. Measuring the power

of light reflected off of an eye does not capture the likeness of the eye; thus, the Yee phototransistor is not an image pick-up device, as recited in Appellants' claim 6.

With further regard to claim 6, Yee does not disclose "an image processor for processing the image of the eye and determining whether the eye is in the desired position for administering the fluid to the eye." Instead, the Yee controller takes light intensity data measured by the phototransistor and determines only if the light intensity has altered sufficiently to signify a blink. Processing light intensity, which is an indication of power data, is not the same as processing an image of an eye.

Accordingly, Yee does not anticipate claim 6 for at least its failure to recite the image pick-up device and the image processor recited in claim 6,

Further, with regard to claim 8, Yee does not disclose "feedback signals corresponding to directions for moving the eye to the desired position." Feedback signals providing eye movement directions are described in the specification to include "vocalizations such as, 'move eye to the left,' [and] 'move eye down.'" (§24). Cues to blink an eyelid are not feedback signals corresponding to directions for moving an eye. Thus, Yee does not disclose each feature of claim 8.

For all the reasons stated above, it is submitted that Appellants' invention as defined in claims 1-6, 8-10, 14-16, 18, and 19 is not anticipated, taught or rendered obvious by Yee, either alone or in combination, and patentably defines over the art of record.

## B. Claims 28-31

Yee does not anticipate claim 28 under 35 U.S.C. § 102(b) because it does not disclose each feature recited in claim 28. Claim 28 recites:

An ophthalmic apparatus for administering a liquid to an eye of a subject, comprising:  
detecting means for detecting the position of the eye; and  
dispensing means for dispensing the liquid into the eye when the eye is in a predetermined position.

Yee does not disclose detecting means for detecting the position of the eye as recited in claim 28. Appellants note that the Examiner does not cite to which portion of Yee he believes discloses detecting means. Instead, the only grounds for rejecting claim 28 under 35 U.S.C. § 102(b) is the Examiner's assertion that "Yee teaches a dispensing means (65, 75, 76)." (emphasis added). Thus, insufficient grounds for rejecting claim 28 are provided.

However, irrespective of the facial inadequacy of the rejection, Yee does not disclose detecting means as recited in claim 28. As described in the specification of the present application, detecting means includes an image pick-up device, such as a still camera or a video camera. Yee does not disclose a still camera, a video camera, or any other type of image pick-up device.

Further, the Yee blink monitor 16 (shown in Fig. 5) is not a detecting means as recited in claim 28 because it does not detect the position of an eye. Instead, blink monitor 16 monitors whether an eyelid has moved to cover an eye. Because an eye can be in any position when blinking, blink monitor 16 doesn't monitor the position of an eye. Thus, blink monitor 16 is not a detecting means for detecting the position of an eye.

Moreover, the Yee phototransistor 18 (shown in Fig. 4) is not an image pick-up device because it measures the intensity of light reflected off of an eye or eyelid instead of capturing an image of an eye. The intensity of reflected light is not an image of an eye. Instead, light intensity is a measure of light's power per unit solid angle. In contrast, an image reproduces the likeness of a subject. Measuring the power of light reflected off of an eye does not capture the likeness of the eye; thus, the Yee phototransistor is not an image pick-up device.

For at least these reasons, Yee fails to disclose each feature recited in claim 28. Accordingly, Yee does not anticipate claim 28 under 35 U.S.C. § 102(b). It follows that Yee also does not anticipate claims 29-31 (depending from claim 28). Appellants, therefore, submit that claims 28-31 are allowable over Yee.

### **Obviousness**

Appellants submit that claims 11-13, 17 and 32 are not obvious over Yee in view of Bertera under 35 U.S.C. § 103(a). Further, claim 7 is not obvious over Yee in view of Miwa. Moreover, the rejection of claims 20, 22, and 23 as being obvious over Yee in view of Vo is improper. Finally, Appellants submit that claims 24-27 are not obvious over Yee in view of Wickham.

#### **1. Standard of Review**

Obviousness is a question of law based on (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). An invention may be obvious if

it merely combines “familiar elements according to known methods [to] yield predictable results.” *KSR Int. Co. v. Teleflex Inc. et al.*, No. 04-1350, (2007).

A basic requirement to establish a case that a claim is *prima facie* obviousness is that “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” M.P.E.P. § 2143. “In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a *prima facie* case of obviousness based upon the prior art.” *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). “If examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent.” *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

## **2. The Cited References in Combination Do Not Disclose Each Element Recited in the Claims**

Appellants submit that the Examiner has not met his burden to establish a *prima facie* case that the rejected claims are obvious under 35 U.S.C. § 103(a). Specifically, the Examiner has not shown that each element of the rejected claims is disclosed by combining the cited references.

### **A. Claims 11-13, 17 and 32**

The combination of Yee and Bertera does not disclose each feature recited in claims 11-13, 17 and 32. For example, neither Yee nor Bertera discloses “an eye-positioning device for assisting a subject in positioning an eye in a desired position” as recited in claim 1. The Examiner does not contend that Bertera discloses this feature and it, in fact, does not. Bertera instead discloses a spectacle-like device with pumps to

propel fluid into an eye, **without** a device for positioning an eye. Yee fails to disclose this feature for the reasons discussed above. Claims 11-13 and 17 depend from claim 1 and incorporate its features; thus, the cited combination fails to disclose each feature of these claims.

Similarly, neither Yee nor Bertera disclose “detecting means for detecting the position of the eye” as recited in claim 28. Yee does not disclose this feature, as the discussion above demonstrates. The Examiner does not assert that Bertera discloses this feature and Bertera simply is not directed to means for detecting the position of an eye. Consequently, Bertera does not disclose detecting means. Claim 32 depends from claim 28 and incorporates its features; thus, the failure of the cited combination to disclose each feature of claim 28 also establishes its failure to disclose each feature of claim 32.

#### B. Claim 7

Combining Yee and Miwa does not disclose each feature recited in claim 7 because the combination does not disclose each feature of claims 1 and 6, from which claim 7 depends. As discussed above, Yee does not disclose “an eye-positioning device for assisting a subject in positioning an eye in a desired position” as recited in claim 1. Claim 6 provides that the eye-positioning device comprises an image pick-up device and an image processor. The image processor is “for processing the image of the eye and determining whether the eye is in the desired position for administering fluid to the eye.”

Combining the disclosure of Miwa with Yee does not disclose a processor for determining whether an eye is in a desired position as described in claim 6. Instead, Miwa discloses a control unit that detects the development of dry spots on an eye using a camera. In fact, the Miwa system must first orient an eye in a predetermined position relative to an apparatus for the dry spot detection to proceed. Thus, instead of determining the position of an eye, the Miwa shows fixing an eye in a known position and then detecting dry spots. A control unit for detecting dry spots that must operate in a fixed position from the outset is not a processor for determining whether an eye is in a desired position as recited in claim 6. Accordingly, combining Miwa and Yee does not disclose each feature recited in claim 7 which depends from claims 1 and 6.

Thus, the combination of Yee and Miwa does not establish a *prima facie* case that claim 7 is obvious under 35 U.S.C. § 103(a).

#### C. Claims 20, 22, and 23

Combining Yee and Vo does not disclose each feature of claim 20 as is necessary to establish a *prima facie* case that claims 20, 22, and 23 are obvious under 35 U.S.C. § 103(a). Claim 20 recites:

An ophthalmic apparatus, comprising:  
a dispensing apparatus for dispensing fluid into an eye of a subject;  
an eye-position detector for detecting the current position of the eye relative to the dispensing apparatus; and  
a feedback device for providing feedback information that assists the subject in moving the eye from the current position to a predetermined position relative to the dispensing apparatus for administering the fluid to the eye.

Yee combined with Vo does not disclose a feedback device for providing feedback information that assists a subject in moving an eye from a current position to a predetermined position relative to the dispensing apparatus. The Examiner does not

state which reference he believes discloses this feature, but this omission is of no consequence as neither reference in fact discloses it.

Yee does not disclose the claim 20 feedback device. Instead, Yee discloses a blink indicator 14 for cueing blinks. Blink indicator 14 is not a feedback device for assisting a subject to move an eye to a predetermined position relative to dispensing apparatus because it pertains simply to cueing blinking. Cues to blink an eye are not information to assist a user in positioning an eye. The fact that the Examiner acknowledges that Yee does not disclose an eye position detector that detects an eye position relative to a dispensing apparatus bolsters Appellants position. Without disclosing means to detect an eye position relative to a dispensing apparatus, Yee can not disclose a feedback device for assisting a subject to move the eye to a predetermined position relative to a dispensing apparatus.

Vo does not disclose a feedback device as recited in claim 20, and the Examiner does not assert otherwise.

Thus, the combination of Yee and Vo does not disclose each feature of claim 20 as is necessary to establish a *prima facie* case that claim 20 is obvious under 35 U.S.C. § 103(a). Similarly, the cited combination does not establish a *prima facie* case that claims 22 and 23 are obvious because they depend from claim 20. Accordingly, Appellants submit that the rejections of claims 20, 22, and 23 under 35 U.S.C. § 103(a) is improper.

Claim 23 is allowable for reasons beyond those discussed above with specific regard to claim 20. Indeed, claim 23 is further allowable because Yee combined with



Vo does not disclose “an image capturing device for capturing an image of the eye.” Yee and Vo disclose only phototransistors for measuring intensity of light reflected from an eye. Light intensity data is not an image of an eye because it is not a likeness of the eye, but instead is simply data representing the power of the light. Because the phototransistors disclosed in the cited references measure light intensity instead of capturing an image they are not image pick-up devices.

Further, Yee combined with Vo does not disclose “a processor for processing the image to determine the current position of the eye relative to the predetermined position” as recited in claim 23. Instead, Yee and Vo disclose controllers that process light intensity data rather than an image to determine if an eyelid is open or closed. More specifically, the cited controllers determine if an eyelid is in front of a specific portion of an eye, i.e. the controllers don't process data related to the entire eye, but only to a portion. Also, the Yee and Vo controllers do not determine the current position of the eye relative to a predetermined position, but rather determine if an eyelid is covering an eye without regard to the position of the eye itself. Thus, the Yee and Vo controllers do not disclose the processor recited in claim 23.

Accordingly, claim 23 is allowable because Yee and Vo in combination fail to disclose each of its features.

#### D. Claims 24-27

The combination of Yee, Vo, and Wickham does not establish a *prima facie* case that claims 24-27 are obvious under 35 U.S.C. § 103(a). The cited references in combination do not disclose each element recited in the claims. Further, there is no motivation to combine Wickham with the other two references in the manner proposed by the Examiner.

*i. The cited combination does not disclose a processor operable to process a digitized image of an eye to determine the position of the eye relative to a predetermined position of an eye.*

Neither Yee nor Vo disclose a processor “operable to ... process the image to determine the current position of the eye relative to the predetermined position.” Instead, those references each disclose a controller that receives data from a phototransistor indicating the intensity of light reflected from a specific portion of an eye. The controllers disclosed in Yee and Vo do not receive or process a digitized image of an eye because light intensity data is not an image of an eye. Light intensity data is a measure of the power of light whereas an image of an eye is a likeness of the eye. Thus, neither Yee nor Vo disclose a processor operable to process a digitized image of an eye to determine the eye’s position relative to a predetermined position.

Wickham also does not disclose a processor operable to process a digitized image of an eye to determine its position relative to a predetermined position. Wickham is not directed to applications involving an eye, but rather pertains to an apparatus for controlling infusion of liquid drops from an infusion bag. Thus, Wickham does not disclose a processor operable to process a digitized image of an eye.

With further regard to Wickham, the Examiner's apparent position that the disclosure of any processor capable of processing an image from a camera discloses the processor recited in claim 24 is erroneous. In Fig. 1, Wickham discloses a processor 34 that computes the volume of liquid drops passing through a drop chamber by processing an image of the drop. However, claim 24 provides for a processor operable to process a digitized image of an eye. An image of a drop is not the same as an image of an eye. Further, processing an image of a drop to determine its volume is different than processing an image of an eye to determine its position. One application of image processing does not disclose all applications of image processing, nor does it disclose a different, specific type of image processing.

Indeed, Wickham recites specific algorithms for calculating the volume of a drop which are inapplicable to determining the current position of an eye relative to a predetermined position. The Wickham algorithms involve using a boundary tracking algorithm to define the boundary of a drop, counting pixels within the boundary, and rotating the image of the drop in the vertical plane to determine the drop's volume. A drop's volume is not a position of an eye. Thus, a processor using the algorithms in Wickham does not disclose a processor operable to process an image of an eye to determine its position.

*ii. The cited combination does not disclose a feedback device operable to output a feedback signal that assists a subject in moving an eye to a predetermined position relative to a dispensing apparatus.*

Yee does not disclose the feedback device “operable to receive the signal from the processor and output a feedback signal that assists the subject in moving the eye to the predetermined position relative to the dispensing apparatus” recited in claim 24. Instead, Yee discloses a blink indicator that provides a user with cues to blink. Blinking is moving an eyelid over an eye. Thus, blinking is not the same as moving an eye itself to a position relative to a dispensing apparatus. Accordingly, the Yee blink indicator is not the same as the feedback device of claim 24.

Vo also does not disclose the feedback device recited in claim 24 because Vo simply does not disclose a feedback device.

In addition, Wickham does not disclose the feedback device recited in claim 24. At most, Wickham discloses an apparatus for infusion delivery that notifies a user that an infusion bag is not in a correct position. However, such an infusion delivery apparatus is not a feedback device operable to output a feedback signal that assists a subject in moving an eye to a predetermined position relative to a dispensing apparatus.

There are multiple reasons why providing notification that a bag is not in a correct position is not assisting a subject to move an eye to a predetermined position relative to a dispensing apparatus: 1) The Wickham notification does not relate to the position of an eye; and 2) Notification of an error condition is not assistance to a subject to move an eye, i.e., notifying a subject that an eye is not in the predetermined position by itself would not assist the subject to move the eye to the predetermined position. Thus, for at

least these reasons, Wickham does not disclose the feedback device recited in claim 24.

*iii. There is no motivation to combine Wickham with Yee and Vo in the manner proposed by the Examiner*

In addition of the failure of the cited references to disclose each feature recited in claims 24-27, there is no motivation to combine the teachings of Wickham with Yee and Vo in the manner proposed by the Examiner. Specifically, the Examiner proposes combining the Wickham digital camera and processor with the teachings of Yee and Vo to allegedly disclose each feature of claim 24. However, one skilled in the art would not be motivated to make the proposed combination.

One skilled in the art would not be motivated to combine the Wickham processor with the apparatuses disclosed in Yee and Vo. Yee and Vo are directed to apparatuses for dispensing liquid onto the surface of an eye. In contrast, Wickham is directed to an apparatus for providing control of infusion delivery using infusion bags. The Wickham processor is for calculating the volume of drops of liquid. One skilled in the art would not be motivated to combine a processor for calculating drop volume in infusion bags with art teaching apparatuses for dispensing liquid onto the surface of an eye. The Wickham processor would not perform the same function as the processor recited in claim 24, namely processing an image of an eye to determine the current position of an eye. Thus, one skilled in the art would not be motivated to combine Wickham with the teachings of Yee and Vo as proposed by the Examiner.

## **Nonstatutory Obvious Type Double Patenting**

Appellants submit that the double patenting rejection of claims 1-4, 6, 17, 18, 28 and 30-32 over claims 2-50 of the copending application is improper. Further, Appellants respectfully disagree with the double patenting rejection of claims 9-16 over claims 2-50 of the copending application in view of Bertera. Moreover, Appellants submit that the double patenting rejection of claims 20 and 22 over claims 2-50 of the copending application in view of Vo is improper.

### **1. Standard of Review**

A nonstatutory obviousness-type double patenting rejection is appropriate when a claim is not patentably distinct from the claims in an application or patent with a common owner or inventor. *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998). Whether a claim is patentably distinct parallels an analysis of obviousness under 35 U.S.C. § 103(a). *In re Braat*, 937 F.2d 589, 19 USPQ2d 1289 (Fed. Cir. 1991). Paralleling an obviousness analysis, a claim is patentably distinct if the claims of a commonly owned or invented patent does not disclose each element of the claim at issue. M.P.E.P. § 2143. The double patenting analysis focuses on the claims and “the disclosure of the patent may not be used as prior art.” MPEP 804 I, see *General Foods Corp. v. Studiengesellschaft Kohle mbH*, 972 F.2d 1272, 1279, 23 USPQ2d 1839, 1846 (Fed. Cir. 1992). However, the disclosure can be used to interpret the claims; for example, the “specification can be used as a dictionary to learn the meaning of a term in the patent claim.” *Toro Co. v. White Consol. Indus., Inc.*, 199 F.3d 1295, 1299, 53 USPQ2d 1065, 1067 (Fed. Cir. 1999).

**2. The Nonstatutory Obvious Type Double Patenting Rejections are Improper Because the Cited Art Does Not Claim Each Element of the Claims at Issue**

**A. Claims 1-4, 6, 17, and 18**

Claims 1-4, 6, 17, and 18 are patentably distinct from claims 2-50 of the '057 application because claims 2-50 of the '057 application do not recite each element of claim 1. Claim 1 recites:

An ophthalmic apparatus comprising:  
an eye-positioning device for assisting a subject in positioning an eye in a desired position for administering a fluid to the eye; and  
an applicator for dispensing the fluid into the eye when the eye is in the desired position.

Claims 2-50 of the '057 application do not disclose "an eye-positioning device for assisting a subject in positioning an eye in a desired position...." Instead, claims 2-50 of the '057 application recite a detector configured to "discern at least one portion of an eye-blink event...." The specification of the '057 application defines an eye-blink event as occurring when the "eyelid(s) cycle between a state in which the anterior portion of the eye is at least partially covered and a state in which the anterior portion is at least partially exposed." (¶24). Claim 5 of the '057 application further defines the blink detector as being "capable of ascertaining at least a portion of the eye-open portion of the eye-blink event."

An eye-positioning device is patentably distinct from a blink detector because positioning an eye is markedly different than detecting eye-blink events. An eye-positioning device assists a user orient his eye into a desired position relative to his eye socket. In contrast, a blink detector detects an eye-blink event, which is the motion of

an eyelid over the eye. Detectors that detect whether a user has blinked do not indicate the position of an eye nor assist a user to move an eye to a desired position.

Thus, the eye-positioning device element of claim 1 is not recited in claims 2-50 of the '057 application. Accordingly, the nonstatutory double patenting rejection of claim 1 is improper. Likewise, the nonstatutory double patenting rejection of claims 2-4, 6, 17, and 18 depending from claim 1 is also improper.

#### B. Claims 20 and 22

Claim 20 is patentably distinct from claims 2-50 of the '057 application because claims 2-50 of the '057 application (whether taken alone, or considered in view of Vo (US 5,171,306)) do not recite each element of claim 20. Claim 20 recites:

An ophthalmic apparatus, comprising:  
a dispensing apparatus for dispensing fluid into an eye of a subject;  
an eye-position detector for detecting the current position of the eye relative to the dispensing apparatus; and  
a feedback device for providing feedback information that assists the subject in moving the eye from the current position to a predetermined position relative to the dispensing apparatus for administering the fluid to the eye.

Claims 2-50 of the '057 application do not recite an eye-position detector for detecting the current position of the eye relative to the dispensing apparatus. Instead, claims 2-50 recite a detector configured to “discern at least one portion of an eye-blink event....” A blink detector is not the same as an eye-position detector because discerning an eye-blink event does not provide the current position of the eye relative to a dispensing apparatus. Indeed, an eye can be in any position relative to a dispensing apparatus during an eye-blink event. Vo does nothing to suggest that a blink detector is an obvious variation of an eye-position detector as recited by applicants in claim 20.



Because claims 2-50 of the '057 application do not recite an eye-position detector, they fail to recite each element of claim 20.

Moreover, neither claims 2-50 of the '057 application nor Vo recite a feedback device as recited in claim 20 of the present application. Claims 2-50 of the '057 application are not directed to positioning an eye, but rather to detecting blinks. Unsurprisingly, a feedback device that assists a subject *move an eye to a predetermined position* relative to the dispensing apparatus is simply not recited in claims 2-50 of the '057 application. Thus, claims 2-50 of the '057 application (whether taken alone, or considered in view of Vo) fail to recite another element of claim 20 at issue here.

Because claims 2-50 of the '057 application (whether taken alone, or considered in view of Vo) do not recite each element of claim 20 of the present application, claim 20 is patentably distinct from claims 2-50 of the '057 application. Accordingly, the double patenting rejection of claim 20, and claim 22 depending from claim 20, is improper.

### C. Claims 28 and 30-32

Claims 28 and 30-32 are patentably distinct from claims 2-50 of the '057 application because claims 2-50 of the '057 application do not recite each element of claim 28. Claim 28 recites:

An ophthalmic apparatus for administering a liquid to an eye of a subject, comprising:  
detecting means for detecting the position of the eye; and  
dispensing means for dispensing the liquid into the eye when the eye is in a predetermined position.

Claims 2-50 of the '057 application do not recite detecting means for detecting the position of the eye. Detecting means are described in the specification of the present application to include an image pick up device, such as a still camera or a video camera. Claims 2-50 of the '057 application do not recite an image pick-up device such as a still camera or a video camera. Instead, claims 2-50 of the '057 application are directed to a blink detector, but a blink detector does not provide means for detecting the position of an eye. Indeed, an eye can be in any position when eyelids move over it during a blink.

Thus, claims 2-50 of the '057 application do not disclose the detecting means recited in claim 28 of the present application. Accordingly, claims 2-50 of the '057 application fail to disclose each element of claim 28, which makes claim 28 patentably distinct from claims 2-50 of the '057 application. Thus, it is submitted that the double patenting rejection of claim 28, and claims 30-32 depending from claim 28, is not proper, and withdrawal of the same is respectfully requested.

#### D. Claims 9-16

The double patenting rejection of claims 9-16 over claims 2-50 of the '057 application in view of Bertera is improper. The rejection is improper at least because claims 2-50 of the '057 application (whether taken alone, or considered in view of Bertera (US 5,368,582)) do not recite each element of the claims.

For example, combining claims 2-50 of the '057 application (whether considered alone, or in view of and Bertera) do not recite each element of claim 9. Claim 9

depends from claim 1 and thus incorporates the elements of claim 1. As discussed above, claims 2-50 of the '057 application do not recite the claim 1 eye-positioning device. Further, Bertera does not disclose an eye-positioning device, and the Examiner does not assert otherwise. Thus, claims 2-50 of the '057 application, even when considered in view of Bertera, does not recite each element of claims 9-16 of the present application.

Thus, Appellants submit that the double patenting rejection of claim 9 is improper because claims 2-50 of the '057 application (even in view of Bertera) does not recite each element of claim 9.

#### E. Terminal Disclaimer

A terminal disclaimer was not filed to overcome the nonstatutory double patenting rejections because Appellants believe the rejections to be improper. However, Appellants would be willing to file a terminal disclaimer to further prosecution of the application to allowance if the Board concludes that the nonstatutory double patenting rejections are proper and there are no other remaining issues.

## **VIII. CLAIMS APPENDIX**

1. An ophthalmic apparatus comprising:  
  
an eye-positioning device for assisting a subject in positioning an eye in a desired position for administering a fluid to the eye; and  
  
an applicator for dispensing the fluid into the eye when the eye is in the desired position.
2. The apparatus of claim 1, wherein the eye-positioning device comprises:  
  
an eye-position detector for detecting the position of the eye; and  
  
a feedback mechanism for receiving information from the eye-position detector corresponding to the position of the eye, and providing feedback information to the subject so that the subject can move the eye to the desired position.
3. The apparatus of claim 2, wherein the feedback mechanism is operable to provide audible cues that assist the subject in moving the eye to the desired position.
4. The apparatus of claim 2, wherein the feedback mechanism is operable to provide visual cues that assist the subject in moving the eye to the desired position.
5. The apparatus of claim 1, wherein the eye-positioning device comprises a display for displaying a real-time image of the eye and a target, such that when the eye is aligned with the target, the eye is in the desired position.
6. The apparatus of claim 1, wherein the eye-positioning device comprises:  
  
an image pick-up device for capturing an image of the eye; and  
  
an image processor for processing the image of the eye and determining whether the eye is in the desired position for administering the fluid to the eye.

7. The apparatus of claim 6, wherein the image pick-up device comprises a CCD camera.

8. The apparatus of claim 6, wherein the eye-positioning device further comprises a feedback device operable to output feedback signals to the subject, the feedback signals corresponding to directions for moving the eye to the desired position.

9. The apparatus of claim 1, wherein the applicator comprises:  
a frame for wearing on the head of the subject; and  
a fluid dispenser supported by the frame proximate the eye of the subject, the fluid dispenser configured to dispense fluid into the eye.

10. The apparatus of claim 9, wherein the frame comprises a spectacle frame.

11. The apparatus of claim 9, wherein the fluid dispenser comprises a jet dispenser.

12. The apparatus of claim 11, wherein the fluid dispenser comprises a piezoelectric jet dispenser.

13. The apparatus of claim 11, wherein the fluid dispenser comprises a thermal droplet jet dispenser.

14. The apparatus of claim 9, wherein the applicator further comprises a controller operable to actuate the fluid dispenser.

15. The apparatus of claim 14, wherein the controller is operable to control the fluid dispenser to dispense a predetermined dosage of fluid into the eye.

16. The apparatus of claim 9, wherein the applicator further comprises a fluid reservoir for storing the fluid and delivering the fluid to the fluid dispenser.

17. The apparatus of claim 1, wherein the applicator comprises:  
a jet dispenser having a plurality of ejection orifices; and  
a controller operable to control the jet dispenser to dispense fluid from one or more selected ejection orifices.
18. The apparatus of claim 1, further comprising a user interface program for acquiring user input for setting one or more operating parameters of the apparatus.
19. The apparatus of claim 18, wherein the user interface program comprises a graphical user interface element for setting one or more operating parameters of the apparatus.
20. An ophthalmic apparatus, comprising:  
a dispensing apparatus for dispensing fluid into an eye of a subject;  
an eye-position detector for detecting the current position of the eye relative to the dispensing apparatus; and  
a feedback device for providing feedback information that assists the subject in moving the eye from the current position to a predetermined position relative to the dispensing apparatus for administering the fluid to the eye.
22. The apparatus of claim 20, wherein the dispensing apparatus comprises a spectacle frame for wearing on the head of the subject and a fluid dispenser carried by the frame and configured to propel fluid into the eye.

23. The apparatus of claim 20, wherein the eye-position detector comprises an image-capturing device for capturing an image of the eye and a processor for processing the image to determine the current position of the eye relative to the predetermined position.

24. The apparatus of claim 23, wherein:

the image-capturing device is operable to output a digitized image of the eye;

the processor is operable to receive the digitized image, process the image to determine the current position of the eye relative to the predetermined position, and output a signal corresponding to the current position of the eye relative to the predetermined position; and

the feedback device is operable to receive the signal from the processor and output a feedback signal that assists the subject in moving the eye to the predetermined position relative to the dispensing apparatus.

25. The apparatus of claim 22, wherein the eye-position detector comprises:

a digital camera for generating an image at the eye, the camera being supported by the frame; and

a processor for processing the image to determine the current position of the eye relative to the predetermined position.

26. The apparatus of claim 25, wherein the processor comprises a controller, the controller being operable to control the fluid dispenser to dispense the fluid.

27. The apparatus of claim 26, wherein the controller controls the fluid dispenser to dispense the fluid when the processor detects that the eye is in the predetermined position.

28. An ophthalmic apparatus for administering a liquid to an eye of a subject, comprising:

detecting means for detecting the position of the eye; and

dispensing means for dispensing the liquid into the eye when the eye is in a predetermined position.

29. The apparatus of claim 28, wherein the detecting means comprises:

means for capturing an image of the eye; and

processing means for detecting the position of the eye relative to the predetermined position based on the image of the eye.

30. The apparatus of claim 28, further comprising feedback means for providing feedback to the subject to assist the subject in moving the eye to the predetermined position if the detecting means detects that the eye is not in the predetermined position.

31. The apparatus of claim 30, wherein the feedback means comprises a feedback device operable to provide an audible or visual feedback signal to the subject to assist the subject in moving the eye to the predetermined position.

32. The apparatus of claim 28, wherein the dispensing means comprises a piezoelectric droplet jet dispenser or a thermal droplet jet dispenser.



**IX. Evidence Appendix**

None.

**X. Related Proceedings Appendix**

None.

Respectfully submitted,

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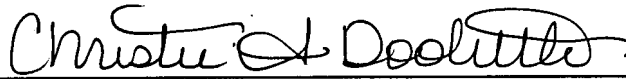
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